

# Notice of Allowability

Application No.

09/914,037

Examiner

Tam M. Nguyen

Applicant(s)

PLEE ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the response filed on October 22, 2004.
2. ☒ The allowed claim(s) is/are 8-13, 19 and 20.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Frederick Calvetti on December 7, 2004.

The application has been amended as follows:

Canceled claims 1-7 and 14-18.

Claim 1 (Withdrawn): Agglomerated zeolitic adsorbents based on zeolite X with an Si/Al ratio such that  $1.15 < \text{Si/Al} \leq 1.5$ , at least 90% of the exchangeable cationic sites of the zeolite X of which are occupied either by barium ions alone or by barium ions and potassium ions, it being possible for the exchangeable sites occupied by potassium to represent up to 1/3 of the exchangeable sites occupied by barium + potassium (the possible remainder generally being provided by alkali metal or alkaline earth metal ions other than barium) and an inert binder, characterized in that the Dubinin volume of the-said adsorbents measured by nitrogen adsorption at 77° K after degassing under vacuum at 300° C for 16 h, is greater than or equal to 0.240 cm<sup>3</sup>/g.

Claim 2 (Withdrawn): Adsorbents according to Claim 1 whose Dubinin volume is, greater than or equal to 0.245 cm<sup>3</sup>/g.

Claim 3 (Withdrawn): Adsorbents according to claim 1 or 2, the overall degree of exchange of which with regard to barium alone or with regard to barium + potassium is greater than or equal to 95%.

Claim 4 (Withdrawn): Adsorbents according to claims 1 to 3, to loss on ignition of which, measured at 900° C, is between 4.0 and 7.7% and preferably between 5.2 and 7.7%.

Claim 5 (Withdrawn): Process for producing the adsorbents as defined in any one of claims 1 to 4, comprising the following stages:

- a) agglomerating zeolite X powder with a binder comprising at least 80% by weight of clay which can be converted to zeolite and shaping, then drying and calcining,
- b) zeolitization of the binder by the action of an alkaline solution,
- c) replacement of at least 90% of the exchangeable sites of the zeolite X by barium, followed by washing and drying the product thus treated,
- d) optionally replacement of at most 33% of the exchangeable sites of the zeolite X by potassium, followed by washing and drying the product thus treated,
- e) activation,

it being possible for the optional exchange with potassium (stage d)) to be carried out before or after the exchange with barium (stage c)).

Claim 6 (Withdrawn): Process for producing adsorbents according to Claim 5, characterized in that the activation in stage e) is a thermal activation carried out at a temperature of 200 to 300° C.

Claim 7 (Withdrawn): Process of producing adsorbents comprising a binder which can be converted to zeolite according to claim 5 or 6, characterized in that the alkaline solution of stage b)) has a concentration of at least 0.5M.

Claim 14 (Withdrawn): Process for the separation of sugars employing an adsorbent according to any one of Claims 1 to 4.

Claim 15 (Withdrawn): Process for separation of polyhydric alcohols employing an adsorbent according to any one of Claims 1 to 4.

Claim 16 (Withdrawn): Process for the separation of substituted toluene isomers, such as nitrotoluene, diethyltoluene or toluenediamine, employing an adsorbent according to any one of Claims 1 to 4.

Claim 17 (Withdrawn): Process for the separation of cresols employing an adsorbent according to any one of Claims 1 to 4.

Claim 18 (Withdrawn): Adsorbents according to Claim 4, wherein the loss on ignition is between 5.2 and 7.7%.

#### REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: The primary reason for allowance is that no prior art of record discloses or suggests a process for the recovery of para-xylene from C<sub>8</sub> aromatic isomer fractions by adsorption of the para-xylene by an agglomerated zeolitic adsorbent in the presence of a desorbent, the agglomerated zeolitic adsorbent comprising zeolite X and an inert binder, the inert binder containing at least 80% by weight of clay which has undergone zeolitization by the action of an alkaline solution, the zeolite X having an Si/Al ratio such that  $1.15 < \text{Si/Al} \leq 1.5$  and having exchangeable cationic sites, herein at least 90% of the exchangeable cationic sites of the zeolite X are occupied either by barium ions alone or by barium ions and potassium ions, wherein the adsorbent has a Dubinin

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volume of greater than or equal to 0.240 cm<sup>3</sup>/g, the Dubinin volume being measured by nitrogen adsorption at 77° K after degassing under vacuum at 300° C for 16 hours.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (571) 272-1452. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tam M. Nguyen  
Examiner  
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TN

  
Walter D. Griffin  
Primary Examiner